AMENDMENTS TO THE CLAIMS

1. (Original) A method for recording information to a recording medium having at least a first recording layer and a second recording layer, the first recording layer having a data area comprising an inner side located at a radially inner region of the recording medium and an outer side located at a radially outer region of the recording medium and the second recording layer comprising a data area including an inner side located at the radially inner region of the recording medium and an outer side located at the radially outer region of the recording medium, the method comprising:

performing a first formatting process on the data area of the second recording layer, said first formatting process comprising formatting said data area of the second recording layer in a series of recording increments, the series of recording increments progressing from the inner side of the data area of the second recording layer to the outer side of the data area of the second recording layer, wherein within each recording increment the formatting is performed along a path extending from the outer side of the data area of the second recording layer to the inner side of the data area of the second recording layer;

performing a second formatting process on the data area of the second recording layer once the first formatting process has been completed, the second formatting process being performed along a path extending from the inner side of the data area of the first recording layer to the outer side of the data area of the first recording layer.

2. (Original) A method according to claim 1, wherein the recording medium is adapted to be recorded using a laser, and the first recording layer is the recording layer closest the laser during use.

3. (Currently amended) A method according to claim 1 [[or 2]], wherein the recording medium is associated with an order of recording user data for each recording layer, and the first recording layer is arranged to be earlier in the recording order than the second recording layer.

4. (Original) A method according to any one of claims 1 to 3, further comprising recording user data on a data area of the first recording layer along a path extending from the inner side of the data area of the first recording layer to the outer side of the data area of the first recording layer on receipt of a request to record user data.

5. (Original) A method according to claim 4, wherein on receiving a request to record user data, the method comprises recording the user data in priority to the performing the first formatting process or the second formatting process.

6. (Currently amended) A method according to claim 4 [[or 5]], further comprising resuming the first formatting process after recording the user data if the first formatting process is not complete.

7. (Currently amended) A method according to ~~any one of claims~~ claim 4 [[to 6]], further comprising resuming the second formatting process after recording the user data if the first formatting process is complete.

8. (Currently amended) A method according to ~~any one of claims~~ claim 4 [[to 7]], further comprising:

recording predetermined data on the first recording layer at a position immediately after recorded user data on receipt of a request to eject the recording medium.

9. (Original) A method according to claim 8, further comprising:

recording predetermined data on the second recording layer at a corresponding radial position to the predetermined data on the first recording layer.

10. (Original) A method according to claim 8, further comprising:

recording predetermined data on the second recording layer at the bit inverted addresses to the addresses of the predetermined data on the first recording layer.

11. (Currently amended) A method according to ~~any one of claims~~ claim 4 [[to 10]], wherein on receipt of a request to eject the recording medium, if an end position of the user data on the first recording layer is further in the radially outer direction of the recording medium than an end position of formatted data on the second recording layer, then the method further comprises:

performing a formatting process on the data area of the second recording layer so as to make the radial position of the end position of formatted data on the second recording layer correspond to the radial position of the end position of the user data on the first recording layer.

12. (Currently amended) A method according to ~~any one of claims~~ claim 4 [[to 11]], wherein on receipt of a request to eject the recording medium, if an end position of the recording of the user data on the first recording layer is further in the radially outer direction of the recording medium than an end position of formatted data on the second recording layer, then the method further comprises:

performing a formatting process on the data area of the second recording layer so as to make the address of the end position of formatted data on the second recording layer be the bit inverted address of the address of the end position of the user data on the first recording layer.

13. (Currently amended) A method according to ~~any one of claims~~ claim 1 [[to 12]], wherein on receipt of a request to eject the recording medium, the method further comprises:

obtaining a last recorded position of data on said recording medium;

recording, when formatting has been completed to a position of each recording layer corresponding to said last recorded area, predetermined data at a position immediately after said last recorded position in the recording layer having said last recorded position and at a position immediately after a position corresponding to said last recorded position in each recording layer in which the data is not recorded; and

ejecting said recording medium after recording the predetermined data.

14. (Currently amended) A method according to ~~any one of claims~~ claim 1 [[to 12]], wherein on receipt of a request to eject the recording medium, the method further comprises:

obtaining a last recorded position of data on said recording medium;

obtaining a format end position of each recording layer in which the data is not recorded yet;

recording dummy data, when an area from said last recorded position to a position corresponding to said format end position is an unrecorded area with respect to one of the recording layers having said last recorded position of the data in accordance with said last recorded position and said format end position, the dummy data being recorded in the area from said last recorded position to the position corresponding to said format end position;

recording predetermined data at a position immediately after the recorded dummy data in each recording layer having said last recorded position of the data, at a position immediately after said format end position in the recording layer having said format end position, and at a position corresponding to said format end position in each recording layer in which data is not recorded yet and formatting has completed; and

ejecting said recording medium after recording the predetermined data.

15. (Currently amended) A method according to ~~any one of claims~~ claim 1 [[to 14]], wherein the recording medium is an optical disk.

16. (Original) An information recording apparatus arranged to record data on a recording medium having at least a first recording layer and a second recording layer, the first recording layer having a data area comprising an inner side located at a radially inner region of the recording medium and an outer side located at a radially outer region of the recording medium and the second recording layer comprising a data area including an inner side located at the radially inner region of the recording medium and an outer side located at the radially outer region of the recording medium, the apparatus being arranged to:

format the data area of the second recording layer of the recording medium according to a first formatting process, said first formatting process comprising formatting said data area of the second recording layer in a series of recording increments, the series of recording increments progressing from the inner side of the data area of the second recording layer to the outer side of the data area of the second recording layer, wherein within each recording increment the formatting is performed along a path extending from the outer side of the data area of the second recording layer to the inner side of the data area of the second recording layer;

format a data area of the first recording layer of the recording medium according to a second formatting process once the first formatting process has been completed, the second formatting process being along a path extending from the inner side of the data area of the first recording layer to the outer side of the data area of the first recording layer.

17. (Currently amended) An information recording apparatus ~~Apparatus~~ according to claim 16, wherein the apparatus is adapted to record data on the recording medium using a laser, wherein the first recording layer is the recording layer closest the laser during use.

18. (Currently amended) An information recording apparatus ~~Apparatus~~ according to claim 16 [[or 17]], wherein the recording medium is associated with an order of recording user data for each recording layer, and the first recording layer is arranged to be earlier in the recording order than the second recording layer.

19. (Currently amended) An information recording apparatus ~~Apparatus~~ according to ~~any one of claims~~ claim 16 [[1 to 18]], wherein the apparatus is further arranged to record user data on a data area of the first recording layer along a path extending from the inner side of the data area of the first recording layer to the outer side of the data area of the first recording layer on receipt of a request to record user data.

20. (Currently amended) An information recording apparatus ~~Apparatus~~ according to claim 19, wherein on receipt of a request to record user data, the apparatus is further arranged to record the user data in priority to the performing the first formatting process.

21. (Currently amended) An information recording apparatus ~~Apparatus~~ according to claim 19 [[or 20]], wherein the apparatus is further arranged to resume

performing the first formatting process after recording the user data if the first formatting process is not complete.

22. (Currently amended) An information recording apparatus ~~Apparatus~~ according to ~~any one of claims~~ claim 19 [[to 21]], wherein the apparatus is further arranged to resume performing the second formatting process after recording the user data if the first formatting process is complete.

23. (Currently amended) An information recording apparatus ~~Apparatus~~ according to ~~any one of claims~~ claim 19 [[to 22]], wherein the apparatus is further arranged to record predetermined data on the first recording layer at a position immediately after recorded user data on receipt of a request to eject the recording medium.

24. (Currently amended) An information recording apparatus ~~Apparatus~~ according to claim 23, wherein the apparatus is further arranged to record predetermined data on the second recording layer at a corresponding radial position to the predetermined data on the first recording layer.

25. (Currently amended) An information recording apparatus ~~Apparatus~~ according to claim 23, wherein the apparatus is further arranged to record predetermined data on the second recording layer at the bit inverted addresses to the addresses of the predetermined data on the first recording layer.

26. (Currently amended) An information recording apparatus ~~Apparatus~~ according to ~~any one of claims~~ claim 16 [[to 25]], wherein the apparatus is further arranged such that on receipt of a request to eject the recording medium, if an end position of the recording of the user data on the first recording layer is further in the radially outer direction of the recording medium than an end position of formatted data on the second recording layer, then the apparatus is further arranged to:

format the data area of the second recording layer so as to make the radial position of the end position of formatted data on the second recording layer correspond to the radial position of the end position of the user data on the first recording layer.

27. (Currently amended) An information recording apparatus ~~Apparatus~~ according to ~~any one of claims~~ claim 16 [[to 26]], wherein the apparatus is further arranged such that on receipt of a request to eject the recording medium, if an end position of the recording of the user data on the first recording layer is further in the radially outer direction of the recording medium than an end position of formatted data on the second recording layer, then the apparatus is further arranged to:

format the data area of the second recording layer so as to make the address of the end position of formatted data on the second recording layer be the bit inverted address to the address of the end position of the user data on the first recording layer.

28. (Currently amended) An information recording apparatus ~~Apparatus~~ according to ~~any one of claims~~ claim 16 [[to 27]], wherein on receipt of a request to eject the recording medium, the apparatus is adapted to:

obtain a last recorded position of data on said recording medium;

record, when formatting has been completed to a position of each recording layer corresponding to said last recorded area, predetermined data at a position immediately after said last recorded position in the recording layer having said last recorded position and at a position immediately after a position corresponding to said last recorded position in each recording layer in which the data is not recorded; and

eject said recording medium after recording the predetermined data.

29. (Currently amended) An information recording apparatus ~~Apparatus~~ according to ~~any one of claims~~ claim 16 [[to 28]], wherein on receipt of a request to eject the recording medium, the apparatus is adapted to:

obtain a last recorded position of data on said recording medium;

obtain a format end position of each recording layer in which the data is not recorded yet; record dummy data, when an area from said last recorded position to a position corresponding to said format end position is an unrecorded area with respect to one of the recording layers having said last recorded position of the data in accordance with said last recorded position and said format end position, the dummy data being recorded in the area from said last recorded position to the position corresponding to said format end position;

record predetermined data at a position immediately after the recorded dummy data in each recording layer having said last recorded position of the data, at a position immediately after said format end position in the recording layer having said format end position, and at a position corresponding to said format end position in each recording layer in which data is not recorded yet and formatting has completed; and

eject said recording medium after recording the predetermined data.

30. (Currently amended) An information recording apparatus ~~Apparatus~~ according to ~~any one of claims~~ claim 16 [[to 29]], wherein the recording medium is an optical disk.

31. (Original) An information recording and reproducing apparatus configured and arranged to record data on and reproduce data from each of a plurality of recording layers of a recording medium, comprising:

a controller that controls a formatting process to format said recording medium by starting from one of the recording layers of which recording order of data is latest and progressing the formatting from one of the recording layers of which the recording order is later toward one of the recording layers of which the recording order is earlier.

32. (Original) An information recording and reproducing apparatus as claimed in claim 31, wherein said recording medium is an optical disc, and said controller controls to start the formatting process of each of the recording layers from an inner side of said optical disc.

33. (Original) An information recording and reproducing apparatus as claimed in claim 31, wherein said controller controls an eject process to eject said recording medium from said information recording and reproducing apparatus so as to obtain a last recorded position of data on said recording medium when an instruction of ejecting said recording medium is made; record, when formatting has been completed to a position of each recording layer corresponding to said last recorded area, predetermined data at a position immediately after said last recorded position in the recording layer having said last recorded position and at a position immediately after a position corresponding to said last recorded position in each recording layer in which the data is not recorded; and eject said recording medium after recording the predetermined data.

34. (Original) An information recording and reproducing apparatus as claimed in claim 31, wherein said controller controls an eject process to eject said recording medium from said information recording and reproducing apparatus so as to obtain a last recorded position of data on said recording medium when an instruction of ejecting said recording medium is made; obtain a format end position of each recording layer in which the data is not recorded yet; record dummy data, when an

area from said last recorded position to a position corresponding to said format end position is an unrecorded area with respect to one of the recording layers having said last recorded position of the data in accordance with said last recorded position and said format end position, the dummy data being recorded in the area from said last recorded position to the position corresponding to said format end position; record predetermined data at a position immediately after the recorded dummy data in each the recording layer having said last recorded position of the data, at a position immediately after said format end position in the recording layer having said format end position, and at a position corresponding to said format end position in each recording layer in which data is not recorded yet and formatting has completed; and eject said recording medium after recording the predetermined data.

35. (Original) An information recording and reproducing apparatus configured and arranged to record data on and reproduce data from each of a plurality of recording layers of a recording medium, comprising:

formatting means for formatting said recording medium by starting from one of the recording layers of which recording order of data is latest and progressing the formatting from one of the recording layers of which the recording order is later toward one of the recording layers of which the recording order is earlier.

36. (Original) An information recording and reproducing apparatus as claimed in claim 35, wherein said recording medium is an optical disc, and said formatting means includes means for starting the formatting of each of the recording layers from an inner side of said optical disc.

37. (Original) An information recording and reproducing apparatus as claimed in claim 35, further comprising:

means for obtaining a last recorded position of data on said recording medium when an instruction of ejecting said recording medium is made;

means for recording, when formatting has been completed to a position of each recording layer corresponding to said last recorded area, predetermined data at a position immediately after said last recorded position in the recording layer having said last recorded position and at a position immediately after a position corresponding to said last recorded position in each recording layer in which the data is not recorded; and

means for ejecting said recording medium after recording the predetermined data.

38. (Original) An information recording and reproducing apparatus as claimed in claim 35, further comprising:

means for obtaining a last recorded position of data on said recording medium when an instruction of ejecting said recording medium is made;

means for obtaining a format end position of each recording layer in which the data is not recorded yet;

means for recording dummy data, when an area from said last recorded position to a position corresponding to said format end position is an unrecorded area with respect to one of the recording layers having said last recorded position of the data in accordance with said last recorded position and said format end position, the dummy data being recorded in the area from said last recorded position to the position corresponding to said format end position;

means for recording predetermined data at a position immediately after the recorded dummy data in each the recording layer having said last recorded position of

the data, at a position immediately after said format end position in the recording layer having said format end position, and at a position corresponding to said format end position in each recording layer in which data is not recorded yet and formatting has completed; and

means for ejecting said recording medium after recording the predetermined data.

39. (Original) A method of controlling an information recording and reproducing apparatus configured and arranged to record data on and reproduce data from each of a plurality of recording layers of a recording medium, the method comprising:

a formatting step of formatting said recording medium by starting from one of the recording layers of which recording order of data is latest and progressing the formatting from one of the recording layers of which the recording order is later toward one of the recording layers of which the recording order is earlier.

40. (Original) A method of controlling an information recording and reproducing apparatus as claimed in claim 39, wherein said recording medium is an optical disc, and said formatting step includes a step of starting the formatting of each of the recording layers from an inner side of said optical disc.

41. (Original) A method of controlling an information recording and reproducing apparatus as claimed in claim 39, further comprising:

a step of obtaining a last recorded position of data on said recording medium when an instruction of ejecting said recording medium is made;

a step of recording, when formatting has been completed to a position of each recording layer corresponding to said last recorded area, predetermined data at a

position immediately after said last recorded position in the recording layer having said last recorded position and at a position immediately after a position corresponding to said last recorded position in each recording layer in which the data is not recorded; and

a step of ejecting said recording medium after recording the predetermined data.

42. (Original) A method of controlling an information recording and reproducing apparatus as claimed in claim 39, further comprising:

a step of obtaining a last recorded position of data on said recording medium when an instruction of ejecting said recording medium is made;

a step of obtaining a format end position of each recording layer in which the data is not recorded yet;

a step of recording dummy data, when an area from said last recorded position to a position corresponding to said format end position is an unrecorded area with respect to one of the recording layers having said last recorded position of the data in accordance with said last recorded position and said format end position, the dummy data being recorded in the area from said last recorded position to the position corresponding to said format end position;

a step of recording predetermined data at a position immediately after the recorded dummy data in each the recording layer having said last recorded position of the data, at a position immediately after said format end position in the recording layer having said format end position, and at a position corresponding to said format end position in each recording layer in which data is not recorded yet and formatting has completed; and

a step of ejecting said recording medium after recording the predetermined data.